



Faculty: FACULTY OF TELECOMMUNICATIONS AND MANAGEMENT

Department: INFORMATION TECHNOLOGIES

Professional Field: 5.3 COMMUNICATION AND COMPUTER TECHNOLOGY

Specialty: SOFTWARE DESIGN

Educational-qualification degree: PROFESSIONAL BACHELOR

LEARNING COURSE DESCRIPTION

1.Course title: MOBILE APP DESIGN

2.Course code: P.17.031.2

3.Type of the course: elective

4.Level: professional bachelor

5.Year of study: second

6.Semester: fourth

7.Number of credits: 6

8.Name of the lecturer: Eng. Dr. Nikola Ranchev

9.Course learning outcomes:

The aim of the course is to acquaint students not only with the basics of developing application software for the most popular mobile operating systems WIN 8.1, iOS, Android, but also with the architectural characteristics of these operating systems. The principles of designing mobile applications in general will also be considered. Much attention will be paid to the study of user interface (UI) controls, as well as data storage and processing.

Students who have completed their training in the course must acquire:

Basic knowledge of the core principles of designing interfaces for mobile devices and tablets, software design of mobile applications and mobile databases, responsive design, user experience, off-line internet standards mode for communication and data security

Practical skills for working with WIN 8.1, iOS, Android operating systems, including:

- Architectural features of operating systems.
- Features of mobile application development.
- Structural characteristics of the application organization.
- Structural characteristics of the programming interface.
- Characteristics of the organization of the user interface of mobile devices.
- Basic tools and methods for organizing the user interface.
- Standard classes of libraries for different OS and their methods.

Competencies:

Upon successful completion of the course, students should be able to:

- create applications for the operating systems WIN 8.1, iOS, Android;
- use debugging tools for the developed software;
- manage application resources;
- create a user interface using standard operating system tools;
- manage navigation between the various activities of the application;
- create their own controls;
- manage standard operating system dialogs and services;
- read data from the internal memory of operating systems and use data providers;
- create their own data warehouses;
- use the notification system.

10.Teaching methods: Lectures + Practical exercises

11. Prerequisites:

Students should have a basic knowledge of programming, communication protocols and Java Script and HTML specifications. They also need to have a basic knowledge of databases.

12. Course contents:

The course focuses on basic principles for development of mobile and internet applications. Mobile application architecture. Security in mobile applications. Off-line mobile applications. Mobile databases. Win 8, iOS and Android based apps. Mobile browsers (micro-browsers). Android security system. Licensing and monitoring of applications. Publish applications.

13. Bibliography

Basic literature:

1. Jim Bennett, Xamarin in Action. Creating native cross-platform mobile apps, Manning Publications Co., 2018
2. Dawn Griffiths, David Griffiths, Head First Android Development, 2nd Edition, O'Reilly Media, 2017
3. Денис Колисниченко, Практическо програмиране за Android™, Асеновци, 2017
4. Майкъл Бъртън, Дон Фелкер, Разработване на приложения за Android For Dummies, АлексСофт, 2015

Additional literature:

1. Paul Johnson, Using MVVM Light with Your Xamarin Apps, Apress, 2018
2. Developers, Сайт за разработчици, достъпен от <http://developer.android.com/index.html>, 2017
3. Haseman C., Android Essentials, Apress Inc, 2008
4. Meier R., Professional Android Application Development, Wiley Publishing, 2008

14. Assessment methods and criteria:

The course ends with an exam.

1.Requirements for the assessment of the six-point system

Grades in the course are formed on the basis of a points system and the maximum number of points that students can receive is 100. They are formed by the following activities:

- First test during the semester - 15 points;
- Second test during the semester - 15 points;
- Homework solution - 30 points;
- Final test on the exam date - 40 points.

Tests can include open and closed questions.

2. Formation of the final mark

Forming an assessment in the training course at each of the above stages, according to the points obtained and their ranking according to the six-point system is given in Table 1.

Table 1.

Number of points	Assessment According to the 6-pointScale System
0 – 20	Fail 2 (F)
20 – 39	Fail 2 (FX)
40 – 49	Satisfactory 3.00 (E)
50 – 59	Satisfactory 3.00 (D)
60 – 69	Good 4.00 (C)
70 – 84	Very good 5.00 (B)
85 – 100	Excellent 6.00 (A)

15. Language of instruction: Bulgarian/English